TREASURY BRIEFING PAPER FOR THE SENATE INQUIRY INTO THE ECONOMIC STIMULUS PACKAGE

1. SIZE AND COMPOSITION OF FISCAL STIMULUS

The size and composition of the Government's key fiscal stimulus measures were published in the *Chart 1: Composition of Fiscal Stimulus* of Budget Paper No. 1, Budget Statement 4.

The measures captured in this chart included the Economic Security Strategy (October), the Nation Building Package (December), the COAG package (December), the Nation Building and Jobs Plan (February) and key measures included in the 2009-10 Budget. These key stimulus measures were allocated into the categories of transfers, investment and COAG reforms for the purposes of Chart 1.

Table 1: Composition of Fiscal Stimulus

Composition of Fiscal Stimulus ($b)				
	2008-09	**2009-10**	**2010-11**	**2011-12**
Transfers	**20.44**	**4.22**	**1.78**	**1.59**
Major fiscal stimulus packages				
ESS package (consumption)	9.55	0.65	0.07	0.00
Nation Building and Jobs Plan (consumption)	10.49	1.72	0.00	0.00
2009-10 Budget Measures				
2009-10 Budget net pension spend*	0.39	1.86	1.71	1.59
Investment	**4.52**	**21.93**	**17.27**	**4.91**
Major fiscal stimulus packages				
ESS package (investment)	0.12	0.07	0.00	0.00
Dec. Nation Building package (all investment)	0.88	1.95	0.39	-0.19
Nation Building and Jobs Plan (investment)	2.04	16.19	10.03	1.67
2009-10 Budget Measures				
2009-10 Budget infrastructure (investment)**	1.48	3.72	6.85	3.43
COAG reforms	**3.50**	**1.78**	**2.23**	**3.57**
COAG funding package (transfers)	3.50	1.78	2.23	3.57
Total	**28.46**	**27.93**	**21.27**	**10.07**

* This is the net effect of the pension and carer reforms and structural savings.

** These amounts do not include the provisions for future equity injections for the National Broadband Network, which are subject to the outcome of the Implementation Study and subsequent commercial negotiations.

With regard to how much of these key stimulus packages have been spent to date, the table below captures information on the transfers and COAG reforms.

Table 2: Roll out of key fiscal stimulus packages, to August 2009

Implementation of Key Fiscal Stimulus Packages ($b)		
	2008-09	**2009-10**
Transfers	**21.13**	*
ESS package (consumption)	9.67	0.06‡
Nation Building and Jobs Plan (consumption)	11.46	0.35†
2009-10 Budget net pension spend	*	*
COAG reforms	**3.55**	*
COAG funding package (transfers)	3.55	*

‡ 2009-10 payment data is for payments to low and middle income families only (FTB-A) (to 31 August).

† 2009-10 payment data is for Tax Bonus Payments only (to 10 August).

* Data not available.

Queries regarding progress of the roll out of the investment components of the Economic Security Strategy and the Nation Building and Jobs Plan should be directed to the Commonwealth Coordinator-General who has responsibility for these components.

Notably, the Commonwealth Coordinator-General published an implementation report — *Nation Building – Economic Stimulus Plan Progress Report* — on 28 August 2009.

2. ECONOMIC EFFECTS OF THE FISCAL STIMULUS PACKAGE

The following section sets out the methodology Treasury used in the Budget for estimating the impacts of fiscal stimulus on GDP growth and employment. It also discusses the estimated impact of the economic stimulus to date.

This section does not attempt to explain the methodologies underlying the Budget forecasts. Rather, it seeks to explain the estimated impact of the fiscal stimulus on the Budget forecasts. A detailed explanation of the Budget forecasts is provided in Budget Statement 2 of Budget Paper No.1 of the 2009-10 Budget papers.

For the purposes of estimating the effect of fiscal stimulus on the Australian economy, data was used that also included some small measures in addition to the key packages outlined above: the Local Councils Infrastructure measure announced in November 2008 and the net effect of 2009-10 Budget spending. In total, these measures add to around $79 billion over the three years from 2008-09 to 2010-11. Stimulus impacts were estimated over the three year forecast period rather than the full forward estimates period.

The timing of the fiscal stimulus package

The timing of the impact of these measures on economic activity will vary in some cases from the timing of the budgeted spending. There are two main reasons for this timing difference. First, the cash payments to households will not be spent immediately upon receipt. We have assumed that 70 per cent of the cash payments will be spent in the forecast period, with around 50 per cent spent in the first two quarters following receipt of payments. These estimates are consistent with international studies and particularly the United States experience in 2001.

The second reason for the timing difference is that there can be delays between infrastructure spending being allocated to a project and activity happening 'on the ground'.

Accounting for savings behaviour, imports and inflation

Taking the dollar amount of spending in the fiscal stimulus package, we then make adjustments for behavioural responses by households and businesses. For one-off transfer payments to households, we assume the spending propensity to be 0.7 in the forecast period. The remaining amount of the transfer payments is assumed to be saved by households, at least over the forecast horizon. In contrast, for direct government spending, the spending propensity is assumed to be 1.

While these spending propensities were applied to the vast majority of stimulus measures, there are some minor exceptions. For example, in the case of business tax concessions we assume a different spending profile than for the cash payments to households.

After applying spending propensities, the next step is to adjust these estimates for the import component of the spending by households, businesses and government. We apply an import share of 0.15 which is the economy-wide average share of endogenous imports in Gross National Expenditure, otherwise referred to as the import penetration ratio. This gives us direct (or first round[1]) fiscal multipliers to GDP of 0.6 for transfer payments and 0.85 for direct government spending. The resulting amount spent over the 3 years to 2010-11 is around $70 billion.

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[1] The forecasts incorporate second round effects on the economy, but these are relatively small and not captured in the estimates of the impact of stimulus.

The estimates used in these calculations are within the range of multipliers estimated by the IMF and OECD. The OECD (2009) estimates that the multipliers for infrastructure and government consumption range from 0.6 and 1.3 in Australia (Table 3). Multipliers for transfer payments to households are estimated at between 0.4 and 0.8. The IMF (2009a) estimates multipliers of between 0.5 and 1.8 for infrastructure measures across the G-20 economies.

Table 3: OECD and IMF estimates of fiscal multipliers spending to GDP

	OECD – Australia		**OECD – US**		**IMF – G-20**
	Year 1	Year 2	Year 1	Year 2	
Infrastructure	0.9	1.1 to 1.3	0.9	1.1 to 1.3	0.5 to 1.8
Government consumption	0.6	0.7 to 1.0	0.7	0.8 to 1.1	
Transfers to households	0.4	0.7 to 0.8	0.5	0.8 to 0.9	

To estimate the effects on real GDP, we adjust the nominal spending numbers for inflation using the appropriate expenditure GDP deflators. For example, for the spending of transfer payments by households we adjust the nominal impact by the consumption deflator.

Estimating counterfactual GDP growth

Following the approach outlined above, we can then produce GDP estimates and forecasts both including and excluding the impact of the stimulus (Table 4). Pre-stimulus GDP growth is calculated by taking our real GDP forecasts and subtracting the real impact of the stimulus. At Budget we estimated that the stimulus measures added 1 per cent to GDP growth in 2008-09 and 1.6 per cent in 2009-10. This translates into a level of GDP that is 2¾ per cent higher in 2009-10 than without the stimulus. The design of the stimulus package involves a staged withdrawal of stimulus, which subtracts 1.2 per cent from GDP growth in 2010-11.

Table 4: Post-stimulus and pre-stimulus real GDP forecast, per cent[2]

	2008-09	**2009-10**	**2010-11**
Pre-stimulus real GDP forecast	-0.9	-2.0	3.4
Contribution of stimulus to GDP growth	1.0	1.6	-1.2
Post-stimulus real GDP forecast	0.1	-0.4	2.1

The peak impact of the ESS and NBJP transfer payments is estimated to have occurred in the June quarter 2009. The infrastructure phase ramps up in the September quarter 2009. As the impact of

[2] The numbers may not add up due to rounding.

these payments fades, the fiscal stimulus will have a diminishing impact on growth and ultimately make a negative contribution to GDP growth.

Impacts of the fiscal stimulus package on employment

Having estimated the impacts of the stimulus package on real GDP growth we use employment estimates from our employment models to determine the impact of the total stimulus measures on aggregate employment and the labour market more generally. Our employment models are based on economy-wide estimates of the relationship between GDP and employment. These relationships do not necessarily hold at the disaggregated level. As such, we do not attempt to estimate employment effects for each of the individual stimulus packages.

The modelling work suggests a long run employment multiplier of around 0.75, which implies that, on average, a 1 per cent increase in GDP leads to a ¾ per cent increase in employment over time.

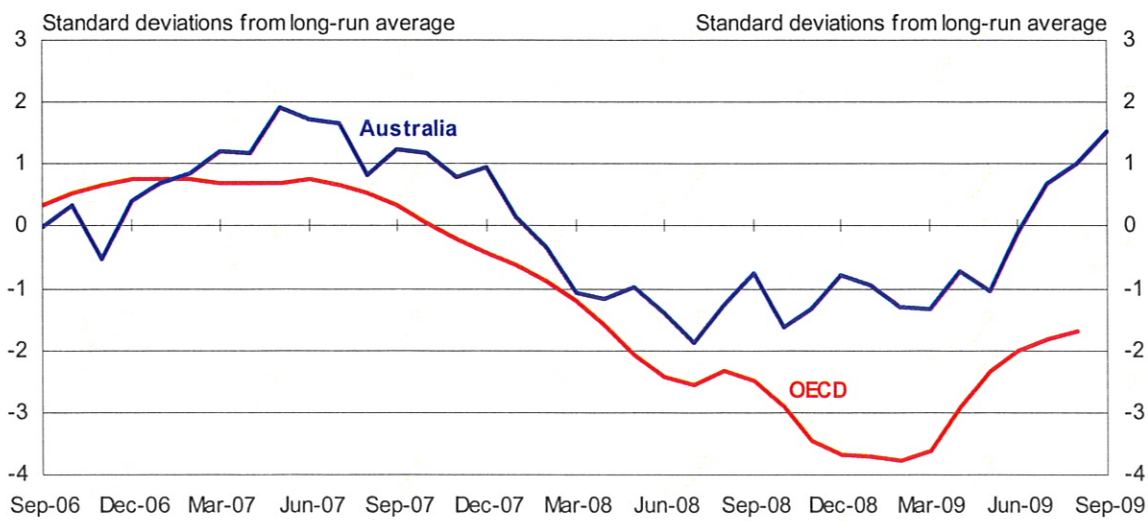
It is important to note that the stimulus package is assumed to have a temporary impact on GDP, which translates into a temporary impact on employment. The peak impact of the stimulus packages estimated at Budget was the addition of 210,000 jobs and the level of employment remains higher through to the end of the forecast period. Estimates of the employment impact, combined with an assessment of the participation rate profiles under the pre and post-stimulus GDP forecasts, yield a forecast for pre and post-stimulus unemployment rate profiles. The peak unemployment rate was estimated to be 1½ per cent lower as a result of the fiscal stimulus.

Estimates of the impact of the stimulus package on GDP outcomes compared with Budget

At Budget, we expected that the stimulus package would add around 1 percentage point to GDP growth over 2008-09. Having reviewed the estimates in light of new data, this remains our estimate of the effect of the fiscal stimulus in that year.

Further, it appears likely that the strong rebound in consumer confidence is linked to the macroeconomic stimulus; both fiscal and monetary (Chart 2). When consumer confidence is higher, consumers are more likely to spend from a given level of income. However, this impact is difficult to quantify.

Chart 2: Comparison of Australian and OECD consumer confidence



Source: Westpac-Melbourne Institute and OECD.

To date, the bulk of the fiscal stimulus impact has occurred via transfer payments to households and therefore household consumption. We estimate that household consumption would have contracted by 1.3 per cent over the year to June 2009 in the absence of the cash payments. This estimate has been informed by a range of econometric models, and our best judgement. The actual consumption outcome was growth of 1.7 per cent over that period, a difference of 3 per cent.

Our estimated path for household consumption without the stimulus is consistent with the decline experienced by the G7 economies as a whole which provided either no stimulus or a much smaller stimulus to households over the corresponding period.

There have been two recent studies undertaken within Australia attempting to assess and quantify the impact of the transfer payments on household spending behaviour. Both of these studies support our estimates of spending from the cash payments to date.

The August Westpac-Melbourne Institute Consumer Sentiment Survey included a question asking how much of the one-off fiscal payments had been spent. Westpac calculates from the responses that around 70 per cent of the cash payments had been spent.

Another study, again using survey evidence, by Andrew Leigh at the Research School of Social Sciences, Australian National University, suggests that around 40 per cent of the transfer payments had been spent in the first quarter following receipt.

3. QUANTIFICATION OF THE VARIOUS FACTORS WHICH HAVE SUPPORTED ECONOMIC ACTIVITY IN AUSTRALIA DURING THE CRISIS

The Australian economy has performed much better through the crisis than other advanced economies. The Australian economy grew 0.6 per cent through the year to June 2009. No other advanced economy grew over this period.

The Committee requested that Treasury provide a weighting of the contribution of the following factors to the performance of the Australian economy during the crisis.

- Monetary Policy
- External demand for Australia's exports
- Movements in the Australian dollar
- Fiscal policy, both automatic stabilisers and discretionary policy decisions.

A combination of stimulus from fiscal and monetary policy, combined with demand from our major trading partners in the Asian region has contributed to recent economic outcomes. While it is difficult to disentangle the actual contribution of individual factors to economic outcomes, reasonable estimates can be made. Part 2 of this paper summarised the estimates of the economic impact of discretionary fiscal policy action in response to the crisis, and the methodology used to derive those estimates. In particular, those estimates were presented by assuming that if discretionary fiscal policy action was not taken all other factors would have remained the same.

This part analyses the channels through which other factors have contributed to the better-than-expected performance of the economy, and reviews the available empirical literature in an attempt to inform the Committee of the relative importance of these factors.

Monetary Policy

In a Reserve Bank of Australia (RBA) Research Discussion Paper published in June 1997, 'The Lags of Monetary Policy', David Gruen, John Romalis and Naveen Chandra presented estimates of the both the impact of changes in monetary policy on economic activity, and how long it takes for these changes to take effect. The paper found that:

> [O]utput growth falls by about one-third of one per cent in both the first and second years after a one percentage point rise in the short-term real interest rate, and by about one-sixth of one per cent in the third year. This implies an average lag of about five or six quarters in monetary policy's impact on output growth. Each of these estimates is, however, subject to considerable uncertainty.[3]

Some caution is needed — beyond those noted by the authors above — in using the results of this paper to prepare an estimate of the contribution of the easing in monetary policy to the performance of the Australian economy during the financial crisis.

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[3] Other studies by Brischetto and Voss (1999), Dungey and Pagan (2000), Berkelmans (2005) and Lawson and Rees (2008), have also indicated that the primary impact of monetary policy occurs within two years.

The official (nominal) cash rate was reduced from 7.25 per cent at the end of August 2008 to its current level of 3.00 per cent in April 2009, a reduction of 4.25 percentage points. However, the reduction in the real cash rate — upon which the estimates in the paper are based — is not necessarily the same as this.

Through-the-year growth in the average of the two measures of underlying inflation (the weighted median and the trimmed mean of the Consumer Price Index) fell by ¾ of a percentage point between the September quarter 2008 and the June quarter 2009. Adjusting the reduction in the nominal cash rate by the fall in this measure indicates that estimated real official cash rate has fallen by 3.50 percentage points since September 2008.

However, bank lending rates have fallen by less than the reduction in the official cash rate, reflecting increased bank funding costs relative to the cash rate.[4] Our analysis indicates that the average nominal bank lending rate is estimated to have fallen by around 3.30 percentage points since September 2008, equating to a decline in the real bank lending rate of about 2½ percentage points.

Using the findings of Gruen, Romalis and Naveen, a 2½ percentage point reduction in the real interest rate would contribute 0.85 per cent to GDP in the first year. However, while a full year has passed since the first reduction in the RBA's official cash rate in September 2008, the majority of the cash rate reductions occurred less than a year ago.

The model in the paper by Gruen, Romalis and Naveen was estimated using data from 1980 to 1996. Since then, the level of household debt has grown significantly, both as a share of household disposable income and GDP. It is highly likely that the increased indebtedness of Australian households would have increased their sensitivity to movements in interest rates, which would in turn would have increased the magnitude, and probably also the speed, of the impact of monetary policy on economic activity.

In estimating the impact of monetary policy, it is important to note that one of the principal channels through which monetary policy affects economic activity is its impact on the exchange rate. With everything else equal, an increase (decrease) in Australia's interest rates will result in an exchange rate appreciation (depreciation), reducing Australia's net exports, and thereby detracting from economic activity. However Australia's monetary policy response to the crisis broadly coincided with responses in other countries, with interest rates in the major advanced economies remaining below those of Australia. This is likely to have meant that the exchange rate transmission mechanism of monetary policy is likely to have been relatively less effective over this period.

External demand for Australia's exports

The Budget forecasts included a significant fall in Australia's export volumes, in line with the collapse in world trade. While in the December quarter 2008 the volume of Australia's exports fell by 1.3 per cent, export volumes have held up better than expected in the first half of 2009.

As Australia's commodity exporters are largely price takers, real export volumes usually reflect the productive capacity of these sectors, reflecting seasonal conditions (for agricultural commodities), the lagged effect of mining investment, and the capacity of export infrastructure (road, rail and ports). Historically, this has meant that fluctuations in demand for Australia's commodity exports have been reflected in variations in price rather than export volumes.

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[4] As noted in an article in the June 2009 RBA Bulletin "The Impact of the Capital Market Turbulence Banks' Funding Costs" by Michael Davies, Chris Naughtin and Arlene Wong.

In the context of the collapse of world trade due to the global recession, the volume of Australia's commodity exports was affected in the December quarter of 2008. Subsequently, the strong recovery in demand from China in 2009 has seen Australia's export volumes hold up considerably better than in other advanced economies.

Overall, in the first half of 2009, the value of Australia's exports fell by over 20 per cent, despite export volumes growing by around 3 per cent, reflecting the effect of the global recession on export prices. Export prices fell by 15.8 per cent in the June quarter, its largest ever quarterly decline, following a decline of nearly 10 per cent in the previous quarter.

The strength of demand from China has been a clear contributing factor to the relative resilience of Australia's non-rural commodity exports. The Chinese economy has rebounded strongly in 2009, supported by substantial and rapid easing of fiscal and monetary policy, in turn supporting demand for Australia's exports. The value of Australia's merchandise exports to China are $1.1 billion higher compared to the end of 2008, while exports to other countries are $6.5 billion lower.

Services exports have also held up better than expected at Budget, supported by education exports to China and India. However, the volume of manufactured exports fell by 6.6 per cent in the June quarter 2009, to be 21.5 per cent lower through the year.

Movements in the Australian dollar

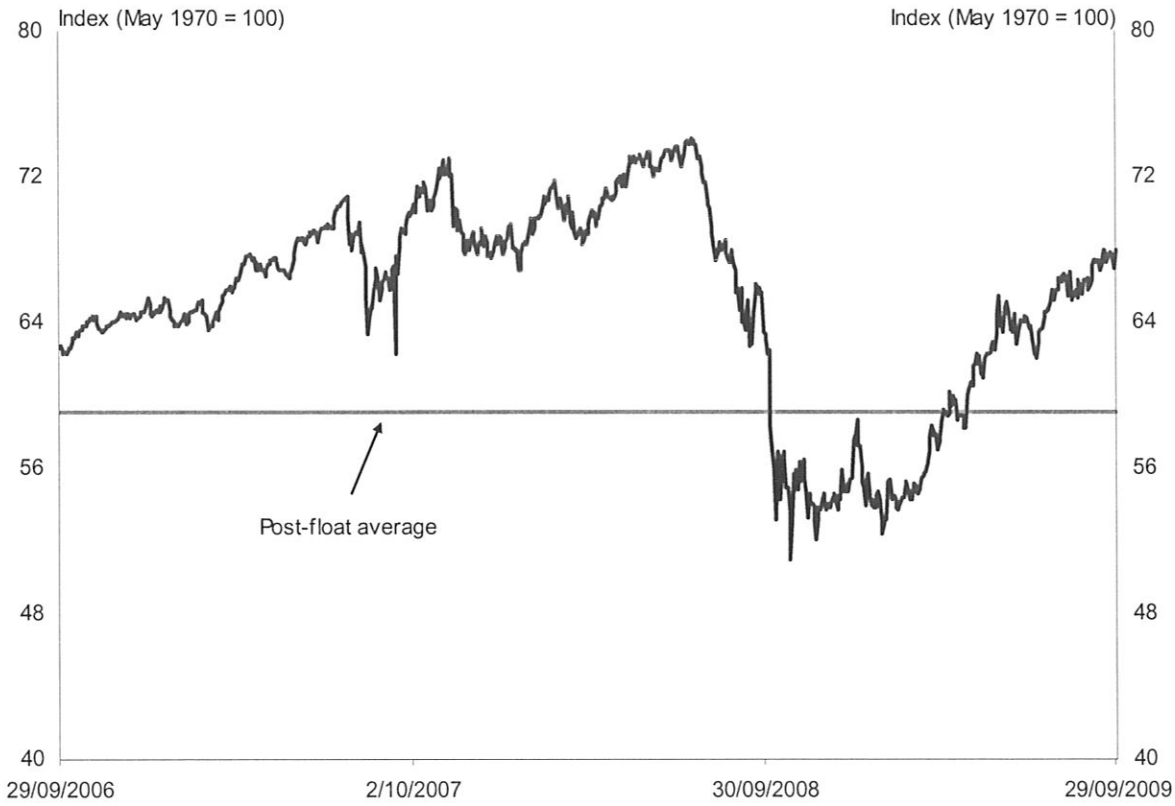
In July 2008, the Australian dollar reached a level of around 74 on the Trade-weighted Index (TWI), well above the TWI's post-float average of 59. The dollar also reached a post-float peak against the US dollar of around 98 cents, well above the post-float average of around 72 US cents. The dollar fell from the July 2008 peak to a low of around 51 on a TWI basis, and around 60 cents against the US dollar, in October 2008.

The trade-weighted exchange rate fluctuated around this level during the four months to February 2009. Since then, the TWI has appreciated by around 25 per cent to be around 68 as at the end of September 2009. The exchange rate has appreciated even more strongly against the US dollar over the same period, appreciating more than 35 per cent to be around 87 US cents at the end of September 2009.

The substantial movements in the exchange rate over the past 12 months are likely to reflect not only shifts in underlying demand for Australia's commodity exports and subsequent terms of trade impacts, but also shifts in both risk aversion among investors and sentiment regarding Australia's relative economic prospects.

While the initial fall in the exchange rate has been a positive for growth, the relatively short duration of the exchange rate trough, the volatility and the subsequent sharp reversal mean that the contribution to growth over the past year is likely to have been modest. In practice, it usually takes some time for trade flows to respond to exchange rate changes.

Chart 3: Australian dollar Trade-weighted Index (TWI)



Source: Thomson Reuters

Other factors

An additional factor that is likely to have contributed to Australia's resilience during the crisis is the structural reforms to financial, labour and product markets undertaken over the past quarter century.

These structural reforms have lifted the economy's productive capacity and improved the flexibility and speed with which both firms and individuals respond to both positive and negative economic shocks. The resilience of the Australian financial system to the Global Financial Crisis illustrates this point.

Macroeconomic stability also reinforces the economy's structural flexibility and efficiency by providing businesses and households with more certainty in making their decisions.

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